REMARKS

Claims 1-24 and 27-31 remain pending. The cancellation of claims 25 and 26 obviates the rejection thereof.

In the Office Action, the Examiner objected to claims 16 and 23; rejected claims 1-13, 15, and 27-31 as being unpatentable over Goodson et al. (U.S. Patent No. 6,942,018) in view of Chrysler et al. (U.S. Patent No. 4,765,397); rejected claims 14 and 19-22 under 35 U.S.C. § 103(a) as being unpatentable over Goodson et al. in view of Chrysler et al. and further in view of Tuckerman et al. (U.S. Patent No. 4,450,472); rejected claims 16-18 under 35 U.S.C. § 103(a) as being unpatentable over Goodson et al. in view of Chrysler et al. and further in view of Crowe (U.S. Patent No. 4,944,344); rejected claims 23 and 24 under 35 U.S.C. § 103(a) as being unpatentable over Goodson et al. in view of Chrysler et al. and further in view of Tuckerman et al. and still further in view of Crowe; and rejected claims 25 and 26 under 35 U.S.C. § 103(a) as being unpatentable over Goodson et al. in view of Wang (U.S. Patent No. 6,118,656).

The objection to the claims has been obviated by the above amendments to claims 16 and 23.

Claims 1-13, 15, and 27-31:

Applicants respectfully traverse the 35 U.S.C. § 103(a) rejection of claims 1-13, 15, and 27-31 over Goodson et al. in view of Chrysler et al. A *prima facie* case of obviousness has not been established, because no evidence has been provided that one of ordinary skill would have been motivated to add the teachings of Chrysler et al. to Goodson et al. Only a bare conclusion of "to increase the channel density in proportion to cooling needs of [the] integrated circuit chip" has been alleged, which is legally insufficient to establish a *prima facie* case. No facts or other evidence of a suggestion or motivation has been provided. See M.P.E.P. § 2143.01.

Further, Goodson et al. already teaches increasing channel density at col. 15, lines 1-5. This teaching of Goodson et al. cannot logically suggest or motivate adding a feature that the reference admittedly lacks. No need or deficiency in Goodson et al. has been identified that would motivate the addition of teachings from Chrysler et al.

Moreover, <u>Chrysler et al.</u>'s exclusive teaching that the fin assembly in Fig. 5 may be used with thermal conduction modules (TCMs) teaches away from the combination. See M.P.E.P. § 2145(X)(D) ("proposed modification cannot render the prior art unsatisfactory for its intended purpose or change the principle of operation of a reference"). <u>Chrysler et al.</u> discloses that these TCMs include a chip carrier on which "[a] hundred or so chips are mounted" (col. 1, lines 31-38). The proposed combination of fin structures intended for cooling chip carriers containing hundreds of chips to the device 50 of <u>Goodson et al.</u> would change the intended purpose or principle of operation of <u>Goodson et al.</u>, <u>Chrysler et al.</u>, or both.

Because no motivation to combine the references has been shown, a *prima facie* case of obviousness has not been established for claims 1-13, 15, and 27-31, and the rejection thereof should be withdrawn.

Regarding claims 14 and 16-18, the proposed modification of <u>Tuckerman et al.</u> (claim 14) or the addition of <u>Crowe</u> (claims 16-18), even if such were proper, fail to cure the evidentiary deficiencies noted above. In view of the above, a prima facie case of obviousness has not been established for claims 14 and 16-18, and the § 103(a) rejections thereof should be withdrawn.

Claims 19-22:

Applicants respectfully traverse the 35 U.S.C. § 103(a) rejection of claims 19-22 over <u>Goodson et al.</u> in view of <u>Chrysler et al.</u> and further in view of <u>Tuckerman et al.</u> As explained above, a *prima facie* case of obviousness has not been established, because no evidence has been provided that one of ordinary skill would have been motivated to add the teachings of <u>Chrysler et al.</u> to <u>Goodson et al.</u> The same traversal applies here.

Further, no evidence has been provided for the proposed addition of <u>Tuckerman et al.</u> Only a bare conclusion of "to improve the reliability of the system and reduce component count" has been alleged, which is legally insufficient to establish a *prima facie* case. See M.P.E.P. § 2143.01. No evidence has been provided that, for example, putting the cooling channels in a surface of a chip would improve reliability. It would not reduce component count, to the extent that heat exchanger 200 in <u>Goodson et al.</u> is part of the same "component" as device 50 after they are fabricated.

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Because no motivation to combine the references has been shown, a *prima facie* case of obviousness has not been established for claims 19-22, and the rejection thereof should be withdrawn.

Regarding claims 23 and 24, the proposed addition of Crowe, even if such were proper, fails to cure the evidentiary deficiencies noted above. In view of the above, a prima facie case of obviousness cannot be established for claims 23 and 24, and the § 103(a) rejection thereof should be withdrawn.

Reconsideration and allowance of claims 1-24 and 27-31 are respectfully requested.

In the event that any outstanding matters remain in this application, Applicants request that the Examiner contact Alan Pedersen-Giles, attorney for Applicants, at the number below to discuss such matters.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 50-0221 and please credit any excess fees to such deposit account.

Respectfully submitted,

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